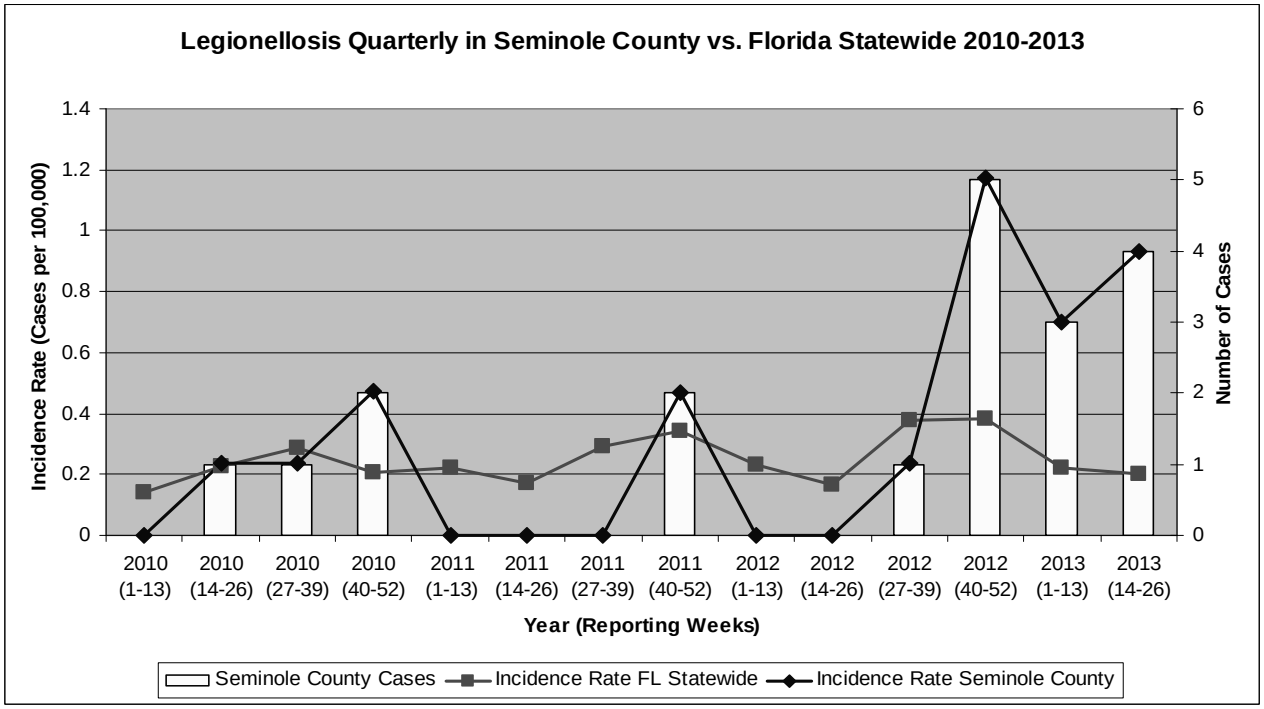
# EPI-GAZETTE

July 2013, Issue 155

The Florida Department of Health in Seminole County
WWW.SEMINOLECOHEALTH.COM

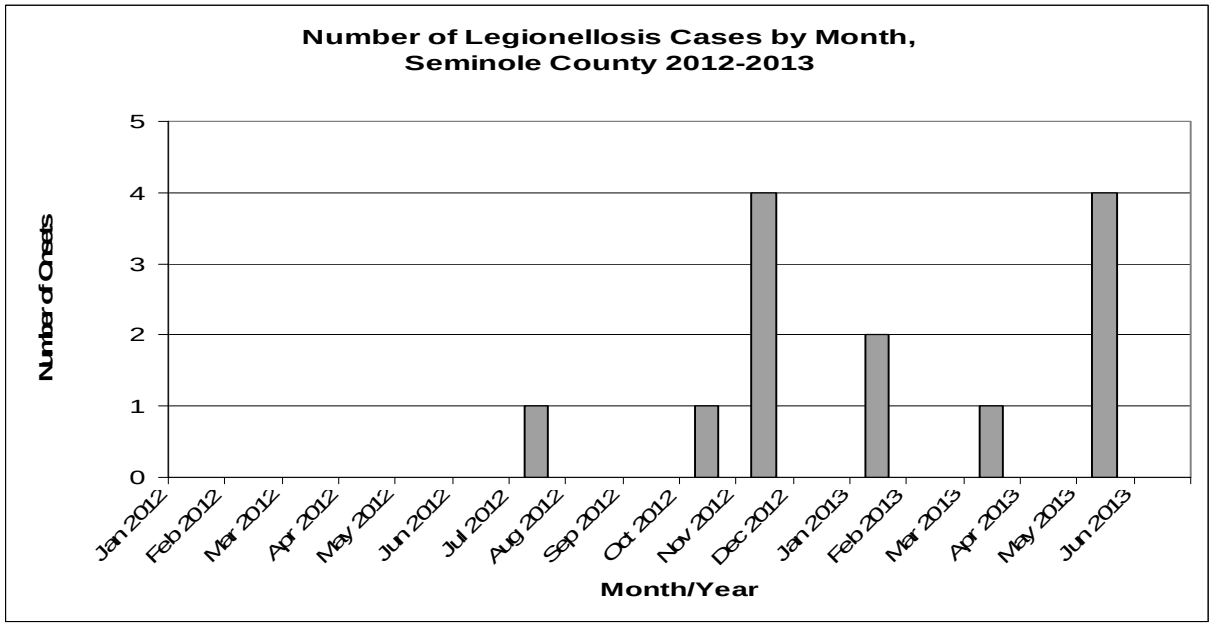

# Recent Legionellosis Case Trends in Seminole County




The incidence rate for legionellosis Seminole County was considerably higher than expected during the fourth quarter of 2012 (reporting weeks 40-52), and has remained elevated during the first and second quarter of 2013 for a period incidence rate of 0.93/100,000. The statewide rate remains consistent with what has been observed in past years, with a slight elevation during the latter half of the calendar year. Average incidence rates per 100,000 from fourth quarter-2012 through second quarter-2013 statewide and for the surrounding counties are as follows: statewide 0.28, Orange 0.11, Lake 0.22, and Volusia 0.13.

When recent Seminole County cases are broken down by month of onset date (shown in the chart on the following page) more cases were reported during November 2012 and again during May 2013. No common source for these infections has been identified. Demographics of individuals presenting with legionellosis are typically >50 years and the male:female ratio is about 2.5:1[(1)].

**Also in this issue:**




The 13 cases observed in Seminole County from July 2012– June 2013 ranged in age from 34-91 years old (median age 57); 84.6% of cases were female, giving Seminole County an unusual 1:5.5 male:female ratio. Patient residences were distributed throughout the county, and the patients were admitted to different hospitals; all presented with the pneumonia form of legionellosis. Most of the patients have pre-existing conditions or risk factors such as current or past smoking history (9/13), chronic lung disease (5/13), immunosuppressive conditions (2/13), and/or chronic heart disease (2/13).

Seminole County experienced a similar unusual increase in incidence during 2009 for which no common source was identified for most cases, and which was the subject of a 2010 Florida Department of Health "Epi Update" article (http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/2010/March2010EpiUpdate.pdf). An excerpt from the discussion section is reprinted below, but which has been updated to reflect current testing guidelines.

## Discussion

Legionellosis is caused by the bacterium *Legionella pneumophila* and other *Legionella* species[(1)]. *Legionella* can be found in natural, freshwater environments, but are present in insufficient numbers to cause disease. Drinking water systems, whirlpool spas, and cooling towers provide the three conditions needed for *Legionella* transmission: heat, stasis, and aerosolization. Hence, exposure to water from these sources is the most common origin of outbreaks. Although most cases are sporadic, travel-associated outbreaks, outbreaks in community settings, and nosocomial and occupational outbreaks are common[(2)].

People with *Legionella* pneumonia frequently require hospitalization. According to the Centers for Disease Control and Prevention[(2)], there are between 8,000 and 18,000 hospitalizations due to legionellosis in the United States each year. While it may be successfully treated, between 5-30% of the cases are fatal. These figures do not represent a true estimation of the disease burden due to low use of diagnostic testing and underreporting[(3)]. Low use may be a result of adherence to the recommendations from the American Thoracic Society (ATS) to limit Legionella laboratory testing to certain groups such as high-risk patients admitted to the intensive care unit (ICU)[(4)].

Legionellosis is associated with two clinically and epidemiologically distinct illnesses; Legionnaires disease (LD), which is characterized by fever, myalgia, cough, pneumonia, and Pontiac Fever, a milder illness without pneumonia. A confirmed case of legionellosis must meet one or more of the laboratory criteria which includes isolation of any *Legionella* organism from respiratory secretions, lung tissue, pleural fluid, or other normally sterile site, or detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents or fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* using validated reagents[(5)].

Risk factors for *Legionella* exposure include use of whirlpool spas, recent travel and overnight stay outside of the home, and recent repairs or maintenance on domestic plumbing[5]. Those who are at higher risk of getting the disease are people over age 65, smokers, and those who have co-morbidities such as chronic obstructive lung disease (COPD), diabetes, cancer or kidney disease or are immunosuppressed.

The mode of transmission for legionellosis mainly includes airborne transmission[6]. However, other modes are possible including aspiration of water. The incubation period for legionellosis ranges between 2-10 days, most often 5-10 days. The incubation period for Pontiac fever which is a milder form of the disease ranges between 5-72 hours, most often 24-48 hours. Person-to-person transmission of the disease has not been documented[1].

The importance of recognizing legionellosis early is that it is best treated with antibiotics not usually administered for common types of pneumonia. Outbreaks or increases in the number of cases legionellosis present a public health challenge since rapid, sensitive, and specific diagnostic tests are not widely used[1]. The joint Infectious Diseases Society of America/American Thoracic Society (ATS) guidelines on community acquired pneumonia (CAP) do not favor routine laboratory testing for *Legionella* of all patients with CAP; empiric therapy is recommended instead[7]. The guidelines do not recommend laboratory testing for legionellosis unless the patient has failed outpatient antibiotic therapy, is admitted to the ICU with severe pneumonia, is actively abusing alcohol, has a history of travel within the previous two weeks, or if there is pleural effusion. Thus, *Legionella* testing is often confined to patients with severe pneumonia and less likely to be ordered for patients who are not severely ill.

Empiric therapy for persons hospitalized with CAP should also include coverage for legionellosis. Pontiac fever is self-limited and does not require antimicrobial therapy. Specific therapy effective against *Legionella* infection includes antibiotic capable of achieving high intracellular concentrations, such as levofloxacin, or a newer macrolide (azithromycin). Observational studies suggest that levofloxacin may be more effective than macrolides, especially in severe cases. Azithromycin and levofloxacin are also licensed by the Food and Drug Administration (FDA) for the treatment of LD and are considered preferably to erythromycin which was historically the drug of choice. Rifampicin has been used as an adjunct in patients failing standard therapy, but data to support this approach are lacking. Penicillin, the cephalosporins and aminoglycosides are ineffective.

**References**


1. Heymann DL (Ed). *Control of communicable diseases manual* (19th ed.). Washington, American Public Health Association. 2008, 337-340.

2. Centers for Disease Control and Prevention (CDC) website: Top 10 Things Every Clinician Needs to Know About Legionellosis. http://www.cdc.gov/legionella/clinicians.html

3. Cramer M. Legionnaires Disease: A case study. *American Journal of Critical Care*, 2003 (12) 3, 234-237.

4. Fields BS, Benson RF et al. *Legionella* and Legionnaires' disease: 25 years of investigation. *Clinical Microbiology Review*, 2002, 506-526

5. Florida Department of Health, Bureau of Epidemiology website: Florida Surveillance Case Definitions. http://www.doh.state.fl.us/disease_ctrl/epi/surv/CaseDefinitions.html

6. Greenberg D, Chiou CC et al. Problem pathogens: Pediatric Legionellosis-implications for improved diagnosis. *Lancet Infectious Diseases*, 2006, 6, 529-535.

7. Mandell LA, Wunderink RG, Anzueto A et al. Infectious Disease Society of America/American Thoracic Society Consensus Guidelines on the Management of Community-Acquired Pneumonia in Adults. *Clinical Infectious Diseases*, 2007, 44:S27-72, S40.

# Thank You For Your Participation!

The Epidemiology Program would like to thank the following healthcare providers for their diligence in timely reporting from Florida's "List of Reportable Diseases/Conditions":

**Joanne Barnett, RN, Central Florida Regional Hospital**
**Veronica Butler, RN, Florida Hospital**
**Sandra Delahoz, RN, South Seminole Hospital**

For more information about Florida's List of Reportable Diseases/Conditions, please contact Gregory Danyluk, PhD at 407-665-3266.

| Selected Diseases/Conditions Reported to the Seminole County Health Department | 2013 through Week 21 | 2012 through Week 21 | 2011 through Week 21 | 2010–2012 Average through Week 21 |
|---|---|---|---|---|
| AIDS* | 20 | 14 | 17 | 18.3 |
| **Animal Bite to Humans**** | **10** | 5 | 5 | **5.7** |
| **Animal Rabies** | **5** | 2 | 2 | **2.0** |
| Campylobacteriosis | 12 | 21 | 14 | 12.7 |
| Chlamydia | 604 | 633 | 661 | 607.3 |
| Cryptosporidiosis | 1 | 2 | 1 | **1.7** |
| Cyclosporiasis | 0 | 0 | 0 | 0.0 |
| Dengue | 0 | 0 | 0 | **0.0** |
| *E. coli Shiga toxin-producing* | 2 | 6 | 2 | **2.7** |
| Giardiasis | 5 | 5 | 3 | 7.3 |
| Gonorrhea | 123 | 146 | 82 | **125.3** |
| ***Haemophilus influenzae (invasive)*** | **5** | 1 | 2 | **1.0** |
| Hepatitis A | 0 | 2 | 1 | **1.0** |
| Hepatitis B (acute and chronic) | 16 | 23 | 20 | 23.3 |
| **Hepatitis C (acute and chronic)** | **144** | 98 | 107 | **112.0** |
| Hepatitis B in Pregnant Women | 1 | 0 | 3 | 2.7 |
| HIV* | 18 | 18 | 26 | 21.3 |
| Lead poisoning | 0 | 7 | 1 | 3.3 |
| **Legionellosis** | **5** | 0 | 1 | **0.3** |
| Lyme Disease | 0 | 2 | 2 | 1.3 |
| **Meningococcal Disease** | **1** | 1 | 0 | **0.3** |
| **Pertussis** | **4** | 2 | 1 | **1.3** |
| Salmonellosis | 20 | 17 | 24 | 21.3 |
| Shigellosis | 1 | 31 | 1 | **11.7** |
| *S. pneumoniae – drug resistant* | 5 | 4 | 5 | 7.0 |
| Syphilis | 11 | 17 | 16 | 13.3 |
| Tuberculosis | 3 | 3 | 7 | 4.7 |
| Varicella | 11 | 10 | 11 | 13.7 |

***** HIV data includes those cases that have converted to AIDS. These HIV cases cannot be added with AIDS cases to get combined totals since the categories are not mutually exclusive. Current AIDS/HIV data are provisional at the county level.

****** Animal bite to humans by a potentially rabid animal resulting in a county health department or state health office recommendation for post-exposure prophylaxis (PEP), or a bite by a non-human primate.

Reported cases of diseases/conditions in **Bold** are >10% higher than the current three year average for the same time period.

# Notice of Changes

Florida Department of Health in Seminole County
Immunizations Program

**Effective July 1, 2013**, The Florida Department of Health in Seminole County will be providing child immunizations ***only*** to:

- *Children who do not have any form of health insurance coverage*
- *Children who are assigned to The Florida Department of Health in Seminole County as their health care provider*

## Those with health insurance and a medical home will be referred to their primary care providers for immunizations.

Per the Vaccines For Children (VFC) Program guidelines, children whose insurance does not fully cover vaccines may receive VFC vaccines from a Federally Qualified Health Center (FQHC) as their medical home.
The FQHC in Seminole County is:

**Central Florida Family Health Center**
2400 County Road 415A
Sanford, FL 32771
Information line: 407-322-8645

Children who do not require vaccine and need ***only*** the Florida DOH680 Certificate of Immunizations for School or Daycare entry can still get these through Immunizations Program. Fees may apply. For more information, please call **407-665-3281**.

The Immunizations Program continues to offer Adult and Travel Immunization services by appointment. Please call 407-665-3281.